



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,446	01/04/2006	Ikao Shimoda	PTB-1207-131	8048
23117 7590 10/26/2010 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
BURCH, MELODY M				
ART UNIT		PAPER NUMBER		
3657				
MAIL DATE		DELIVERY MODE		
10/26/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/563,446

Applicant(s)

SHIMODA ET AL.

Examiner

Melody M. Burch

Art Unit

3657

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 6 and 8-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 6 and 8-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI.08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Interval Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/26/10 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 6, 8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-542789 (JP'789) in view of US Patent 5445249 to Aida et al.

Re: claims 1, 6, 8, and 14. JP'789 shows in figures 2 and 4 a dynamic vibration absorber comprising: a weight 5; a frame body 1 which surrounds said weight; a plurality of vertically mounted U-shaped leaf springs 4B, 6B which are interposed between said frame body and said weight in a direction perpendicular to a vertical direction so as to hold said weight with respect to said frame body movably with respect

to all the directions in a plane and a damping mechanism 7B for damping the vibration of said weight in the plane, said plurality of leaf springs each having a concave surface, wherein said frame body has a pair of X-direction vertical wall portions opposed to each other in an X direction in the plane with said weight disposed therebetween and a pair of Y-direction vertical wall portions opposed to each other in a Y direction which intersects the X direction in the plane with said weight disposed therebetween, said X-direction vertical wall portions and said Y-direction vertical wall portions each extending in vertical direction, wherein at least a first two of said leaf springs are interposed between one of said pair of X-direction vertical wall portions and said weight in the X direction, and are opposed to each other in the Y direction, such that edge portions thereof extending in the vertical direction are secured to said one X-direction vertical wall portion, respectively, other edge portions thereof extending in the vertical direction are secured to said weight, respectively, and said concave surface of one of said at least first two of said leaf springs faces said concave surface of another one of said at least first two of said leaf springs, wherein at least a second two of said leaf springs are interposed between another one of said pair of X-direction vertical wall portions and said weight in the X direction, and are opposed to each other in the Y direction, such that edge portions thereof extending in the vertical direction are secured to said other X-direction vertical wall portion, respectively, other edge portions thereof extending in the vertical direction are secured to said weight respectively, and said concave surface of one of said at least second two of said leaf springs faces said concave surfaces of another one of said at least second two of said leaf springs, wherein at least a third two of said leaf

springs are interposed between one of said pair of Y-direction vertical wall portions and said weight in the Y direction, and are opposed to each other in the X direction, such that edge portions thereof extending in the vertical direction are secured to said one Y-direction vertical wall portions, respectively, other edge portions thereof extending in the vertical direction are secured to said weight, respectively, and said concave surface of one of said at least third two of said leaf springs faces said concave surface of another one of said at least third two of said leaf springs, wherein at least a fourth two of said leaf springs are interposed between another one of said pair of Y-direction vertical wall portions and said weight in the Y direction, and are opposed to each other in the X direction, such that edge portions thereof extending in the vertical direction are secured to said other Y-direction vertical wall portions, respectively, other edge portions thereof extending in the vertical direction are secured to said weight, respectively, and said concave surface of one of said at least fourth two of said leaf springs faces said concave surface of another one of said at least fourth two of said leaf springs as shown in figures 2 and 4.

JP'789 is silent with regards to the limitation wherein the weight is arranged immovably in the vertical direction perpendicular to the plane and/or wherein the damping mechanism includes: a first magnetic field generating body which is fixed to one of said weight and said one of said pair of X-direction vertical wall portions between said concave surfaces of said at least first two of said leaf springs in the Y direction and generates a magnetic field, and a first plate-shaped electric conductor which is fixed to another one of said weight and said one of said pair of X-direction vertical wall portions

between said concave surface of said at least first two of said leaf springs in the Y direction and generates an eddy current by its relative movement with respect to said first magnetic field generating body, a second magnetic field generating body which is fixed to one of said weight and said other of said pair of X-direction vertical wall portions between said concave surfaces of said at least second two of said leaf springs in the Y direction and generates a magnetic field, and a second plate-shaped electric conductor which is fixed to another one of said weight and said pair of X-direction vertical wall portions between said concave surface of said at least first two of said leaf springs in the Y direction and generates an eddy current by its relative movement with respect to said first magnetic field generating body, a second magnetic field generating body which is fixed to one of said weight and said other of said pair of X-direction vertical wall portions between said concave surfaces of said at least second two of said leaf springs in the Y direction and generates a magnetic field, and a second plate-shaped electric conductor which is fixed to another one of said weight and said other of said pair of X-direction vertical wall portions between said concave surfaces of said at least second two of said leaf springs in the Y direction and generates an eddy current by its relative movement with respect to said second magnetic field generating body, a third magnetic field generating body which is fixed to one of said weight and said one of said pair of Y-direction vertical wall portions between said concave surface of said at least third two of said leaf springs in the X direction and generates a magnetic field, and a third plate-shaped electric conductor which is fixed to another one of said weight and said one of said pair of Y-direction vertical wall portions between said concave surfaces of said at

least third two of said leaf springs in the X direction and generates an eddy current by its relative movement with respect to said third magnetic field generating body, and a fourth magnetic field generating body which is fixed to one of said weight and said other of said pair of Y-direction vertical wall portions between said concave surfaces of said at least fourth two of said leaf springs in the X direction and generates a magnetic field, and a fourth plate-shaped electric conductor which is fixed to another one of said weight and said other of said pair of Y-direction vertical wall portions between said concave surfaces of said at least fourth two of said leaf springs in the X direction and generates an eddy current by its relative movement with respect to said fourth magnetic field generating body.

Aida et al. teach in figures 1 and 2 the limitation of the weight being immovably situated in the vertical direction by way of the weight's cooperation with element 9.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the movement of the weight of the absorber of JP'789 to have been immovable in the vertical direction, as taught by Aida et al., in order to provide a means of keeping the gap between the magnetic components fixed to dynamically control the weight's horizontal movement.

Aida et al. teach in figures 1 and 2 and in the last eleven lines of the abstract the use of four magnetic field generating body and electric conductor mechanisms arranged equiangularly around the weight 1 forming a part of a damping mechanism between the weight 1 and a frame body 3.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the damping mechanism of the vibration absorber of JP'789, as modified, to have included four equiangularly arranged magnetic field generating body and electric conductor mechanisms, in view of the teachings of Aida et al. in order to provide uniform damping on each side of the weight.

Examiner notes that such a combination would result in the damping mechanism being disposed between and defined by the concave surfaces of the leaf springs on each side of the weight.

4. Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'789 in view of US Patent 5445249 to Aida et al. as applied above, and further in view of US Patent 2004/0134733 to Wood.

JP'789, as modified, is silent with regards to the tuning of the system.

Wood teaches in paragraph [0017] and in figure 2 the use of a dynamic absorber being tuned to a natural frequency of a structure where the dynamic vibration is installed and also teaches the use of a plurality of dynamic vibration absorbers wherein a natural frequency of the weight, the mass of the weight, the spring constant or the damping coefficient of at least one of the dynamic vibration absorbers is different from that of another.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the tuning of the system of JP'789, as modified, to have included the abovementioned tuning arrangement, as taught by Wood, in order to provide a quieter machine or system.

Response to Arguments

5. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 571-272-7114. The examiner can normally be reached on Monday-Friday (6:30 AM-3:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on 571-272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/563,446

Page 9

Art Unit: 3657

October 22, 2010

/Melody M. Burch/

Primary Examiner, Art Unit 3657